UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/537,598	06/06/2005	Johan Paul Linnartz	NL 021217	5023

24737 7590 03/04/2009
PHILIPS INTELLECTUAL PROPERTY & STANDARDS
P.O. BOX 3001
BRIARCLIFF MANOR, NY 10510

EXAMINER	
BOLOURCHI, NADER	
ART UNIT	PAPER NUMBER
2611	
MAIL DATE	DELIVERY MODE
03/04/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/537,598	LINNARTZ, JOHAN PAUL	
	Examiner	Art Unit	
	NADER BOLOURCHI	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 January 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *15 January 2009* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Remarks

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 1/15/2009 has been entered.

2. Claim objections in view of the amendment are withdrawn.

3. Drawings objections in view of the amendment are withdrawn.

4. Specification objection in view of the amendment is withdrawn

5. Claim Rejections in view of the amendment under 35 USC § 112 is withdrawn.

6. All amended claims are rejected under 35 USC § 102.

Response to Arguments

7. Applicant's arguments with respect to claims 1-10 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> **Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.**

/Nader Bolourchi/
Examiner, Art Unit 2611
2/18/2009

8. Claims 8-10 are rejected under 35 U.S.C. § 101 because the claimed invention is directed to non-statutory subject matter. Based on Supreme Court precedent (See Diamond v. Diehr, 450 U.S. 175, 184 (1981); Parker v. Flook, 437 U.S. 584, 588 n.9 (1978); Gottschalk v. Benson, 409 U.S. 63, 70 (1972); Cochrane v. Deener, 94 U.S. 780,787-88 (1876)) and recent Federal Circuit decisions, a § 101 process must (1) be tied to another statutory class (such as a particular apparatus) or (2) transform underlying subject matter (such as an article or materials) to a different state or thing (The Supreme Court recognized that this test is not necessarily fixed or permanent and may evolve with technological advances. Gottschalk v. Benson, 409 U.S. 63, 71 (1972), http://www.uspto.gov/web/offices/pac/dapp/opla/preognotice/section_101_05_15_2008.pdf).

Claims 8-10 are rejected because they do not positively recite the other statutory class (the thing or product) to which it is tied, for example by identifying the apparatus that accomplishes the method steps, or positively recite the subject matter that is being transformed, for example by identifying the material that is being changed to a different state (See MPEP § 2106.IV.B: Determine Whether the Claimed Invention Falls Within An Enumerated Statutory Category). Therefore, the claims 8-10 are being construed as software which is not considered a patentable statuary class of invention.

/Nader Bolourchi/
Examiner, Art Unit 2611
2/18/2009

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

> **(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.**

9. Claims 1-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Bottomley (US 5787131 A).

Regarding claim 1, Bottomley discloses a diversity receiver (Fig. 3; col. 4: lines 48-59) comprising multiple antenna receiving branches ($r_a(n)$ and $r_b(n)$ in Fig. 1 and Fig. 3), each of said multiple antenna receiving braches comprising estimating means for estimating at least a receiving channel parameter, wherein a first estimating means (204, 306 and 302 connected to $r_a(n)$ in Fig. 3) in one branch of the multiple antenna receiving branches ($r_a(n)$ in Fig. 3) is operatively connected to a second estimating means (204, 306 and 302 connected to $r_b(n)$ in Fig. 3) in a further branch of the multiple antenna receiving braches ($r_b(n)$ in Fig. 3) for using at least a part of the channel parameter estimate in the one branch as an aid for estimating at least a receiving channel parameter in the further branch (302 from estimating means of $r_a(n)$ branch is connected to 306 from channel estimating means of $r_b(n)$ in Fig. 3 ; furthermore, 302 from estimating means of $r_b(n)$ branch is connected to 306 from channel estimating means of $r_a(n)$ in Fig. 3)

/Nader Bolourchi/
Examiner, Art Unit 2611
2/18/2009

Regarding claim 2, Bottomley discloses as stated in rejection of claim 1 above. He also discloses the channel parameter estimate in the one branch is used as a starting point for the channel parameter estimate in the further branch (302 from estimating means of $r_a(n)$ branch is connected to 306 from channel estimating means of $r_b(n)$ in Fig. 3 ; furthermore, 302 from estimating means of $r_b(n)$ branch is connected to 306 from channel estimating means of $r_a(n)$ in Fig. 3).

Regarding claim 3, Bottomley discloses as stated in rejection of claim 1 above. He also discloses the channel parameter estimate in the one branch provides a coarse channel parameter estimate (output of 302 from estimation means of $r_a(n)$ branch), and wherein said coarse channel parameter estimate is used as a start for the channel parameter estimate in the further branch (output of 302 from estimation means of $r_a(n)$ branch is input to estimation means of $r_b(n)$ through 204 and 306 in Fig. 3).

Regarding claim 4, Bottomley discloses as stated in rejection of claim 1 above. He also discloses the second estimating means in the further branch is operatively connected to the first estimating means in said one branch for using at least a part of the channel parameter estimate in the further branch as an aid for estimating the receiving parameter channel in said one branch (302 from estimating means of $r_a(n)$ branch is connected to 306 from channel estimating means of $r_b(n)$ in Fig. 3 ; furthermore, 302 from estimating means of $r_b(n)$ branch is connected to 306 from channel estimating means of $r_a(n)$ in Fig. 3).

/Nader Bolourchi/
Examiner, Art Unit 2611
2/18/2009

Regarding claim 5, Bottomley discloses as stated in rejection of claim 1 above. He also discloses the diversity receiver has two antenna receiving branches ($r_a(n)$ and $r_b(n)$ in Fig. 1 and Fig. 3).

Regarding claim 6, Bottomley discloses as stated in rejection of claim 1 above. He also discloses the diversity receiver is arranged for estimating a time delay between the appearance of a certain channel parameter estimate in the various branches ("delay spread" in col. 1: lines 40-55; "path delay" in col. 4: lines 35-47).

Regarding claim 7, Bottomley discloses as stated in rejection of claim 1 above. He also discloses a mobile radio communication device provided with the diversity receiver ("a digital wireless communication system" in col. 6: lines 38-64)

Regarding claim 8, Bottomley discloses a method for receiving a signal (Fig. 1; Fig. 3; col. 4: lines 48-59) comprising the acts of: receiving the signal through multiple antenna receiving branches ($r_a(n)$ and $r_b(n)$ in Fig. 1 and Fig. 3); in each branch, estimating parameters about a received channel to form channel estimation results(output estimating means of $r_a(n)$ branch in Fig. 3, which is input of 208 connected to $r_a(n)$; also output estimating means of $r_b(n)$ branch in Fig. 3, which is input of 208 connected to $r_b(n)$);
directly exchanging the channel estimation results between a first branch (channel estimation means of $r_a(n)$ branch, which includes 204, 306 and 302 connected to $r_a(n)$ in

Fig. 3) and a second branch (channel estimation means of $r_b(n)$ branch, which includes 204, 306 and 302 connected to $r_b(n)$ in Fig. 3) ; and using first channel estimation results about a first received channel from the first branch as an aid for estimating parameters about a second received channel in the second branch and forming second channel estimation results (302 from estimating means of $r_a(n)$ branch is connected to 306 from channel estimating means of $r_b(n)$ in Fig. 3 ; furthermore, 302 from estimating means of $r_b(n)$ branch is connected to 306 from channel estimating means of $r_a(n)$ in Fig. 3).

Regarding claim 9, Bottomley discloses as stated in rejection of claim 8 above. He also discloses a signal (S(n) at the input of 102 in Fig. 1) is received through multiple antenna receiving branches ($r_a(n)$ and $r_b(n)$ in Fig. 1 and Fig. 3), wherein in each branch an estimation is made about a received channel (channel estimation means for $r_a(n)$ branch, which includes 204, 306 and 302 connected to $r_a(n)$ in Fig. 3; channel estimation means for $r_b(n)$ branch, which includes 204, 306 and 302 connected to $r_b(n)$ in Fig. 3), and wherein channel estimation results from one branch of the multiple antenna receiving branches are being used as an aid for estimating the received channel in further branch of the multiple antenna receiving branches (302 from estimating means of $r_a(n)$ branch is connected to 306 from channel estimating means of $r_b(n)$ in Fig. 3).

/Nader Bolourchi/
Examiner, Art Unit 2611
2/18/2009

Regarding claim 10, Bottomley discloses as stated in rejection of claim 8 above. He also discloses estimating a delay value between a first channel parameter in the first branch and the first channel parameter in the second branch ("delay spread" in col. 1: lines 40-55; "path delay" in col. 4: lines 35-47); and synchronizing estimation in the branches by using the delay value (Examiner notes that the impairment estimator in Fig. 2 can be replaced by a data correlation estimator, which estimate the data correlation matrix R_{rr} as recited in col. 3: lines 15-34. However, with 2 antennas and 3 channel taps, the aforesaid matrix is nonsingular, and an inverse can be computed as recited in col4: lines 35-47, which is interpreted as estimation using the two rays are synchronized)

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Okanoue (US 5,202,903 A); Raitola et al. (US 6,445,757 B1); Frigon (US 2003/0108135 A1); Siala et al. (US 6,768,713 B1); Czylwik et al. (US 7,324,437 B1).

Contact Information

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nader Bolourchi whose telephone number is (571) 272-8064. The examiner can normally be reached on M-F 8:30 to 4:30.

/Nader Bolourchi/
Examiner, Art Unit 2611
2/18/2009

12. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David. C. Payne can be reached on (571) 272-3024. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

13. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at (866) 217-9197 (toll-free).

/David C. Payne/

Supervisory Patent Examiner, Art Unit 2611

/Nader Bolourchi/
Examiner, Art Unit 2611
2/18/2009